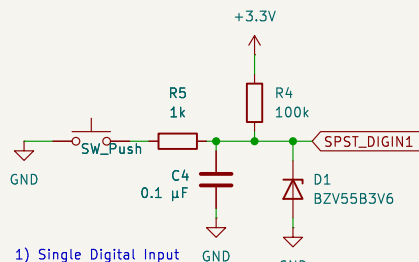
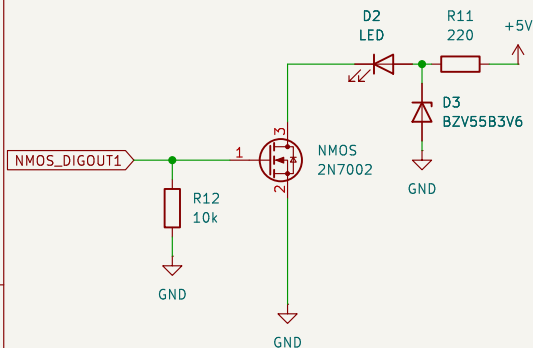


Buck Converter AMS117-3.3V.
 - 0.1 µF for high-freq filter, 10 µF for low-freq. Together Wide-band filter
 - Parallel, order doesnt matter
 - Added 22 µF, in accordance w datasheet



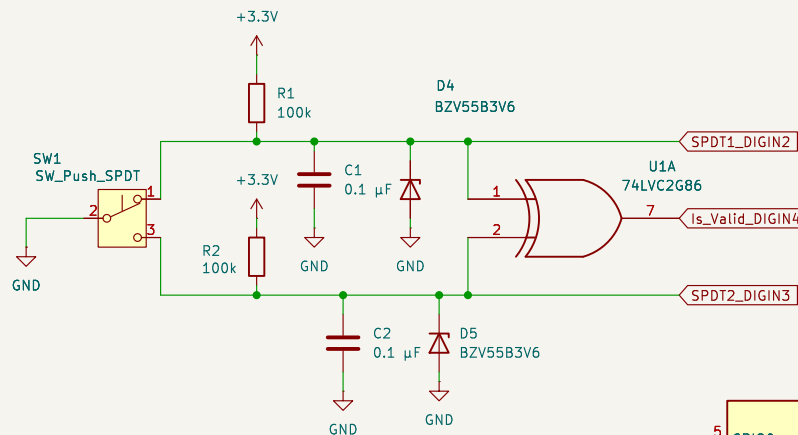
1) Single Digital Input

$T = RC$, where T is debounce (s), R resistance, and C capacity (fahrad)
 $C = T/R = 0.01/10 \times 5 = 0.1 \mu F$

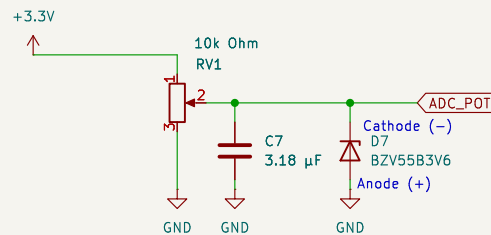


4) LED Output w NMOS

- When DIG_OUT1 High, Current flow from Drain (3) to Source (2)
 - Pull Down 10k Ohm Resistor, prevent floating

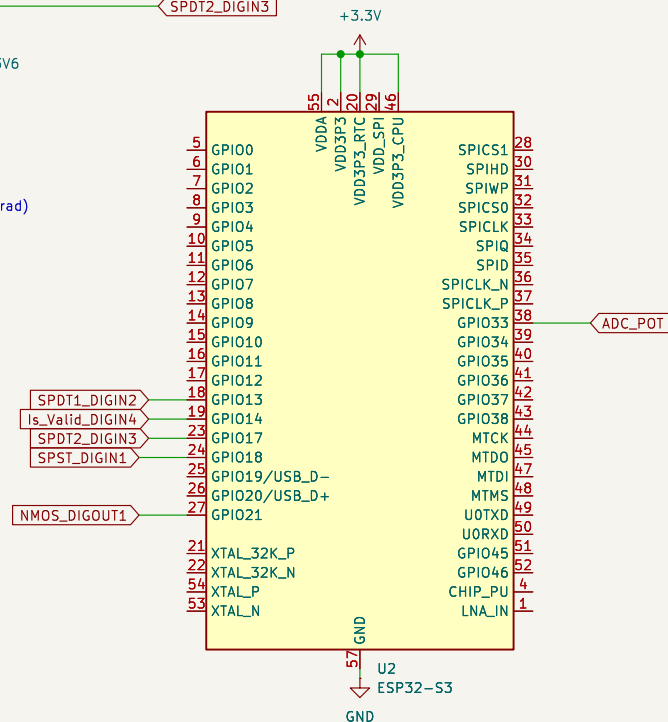


2) Dual Digital Inputs (SPDT Switch) : 3 Pins
 - Debounce using Capacitor, calculations are as follows:
 $T = RC$, where T is debounce (s), R resistance, and C capacity (fahrad)
 $C = T/R = 0.01/10 \times 5 = 0.1 \mu F$
 - Pull Up 100k Ohms from 3.3 volts
 - XOR logic gate for isvalid



3) Single Analog input (Potentiometer): 3 Pins

- Potentiometer, 10k Ohm
 $f_c = 1/(2 \times \pi \times R_c \times c)$
 $f_c = 10 \text{ Hz}$, $R_c = R_{\text{potentio}} / 2$
 $C = 3.18 \mu F$



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Title: ROVRC_Final

Size: A4 Date: 2025-10-04

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